



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

Via Electronic Mail Only

December 16, 2022

Mr. Brian Sandburg
Senior Scientist
GHD
900 Long Lake Road, Suite 200
St. Paul MN 55112

Re: South Andover Superfund Site
Request for extension on groundwater flow investigation and 1,4-dioxane and PFAS in groundwater at the Site

Dear Mr. Sandburg:

Thank you for your email and letter dated December 12, 2022. The U.S. Environmental Protection Agency (EPA) understands your desire to wait for results from the groundwater study being performed by the Minnesota Pollution Control Agency (MPCA) before moving forward with the groundwater flow investigation and groundwater investigation of 1,4-dioxane and per- and polyfluoroalkyl substances (PFAS). However, your request to take 30 days to review the data and reports is too long given the urgency of the drinking water situation north of the South Andover Superfund Site (Site). Additionally, the need for 60 days to develop a groundwater monitoring plan after a meeting with EPA is too long given that this recommendation was presented in the Fifth Five-Year Review (FYR) Report from 2021. Two milestones from the Fifth FYR have already been extended 90-days: 1) Development of a formal groundwater monitoring plan; and 2) determining the extent of vinyl chloride contamination in the groundwater above the State's promulgated Health Risk Limit of 0.2 micrograms per liter (ug/L).

EPA has expressed the urgency of the drinking water situation in our previous letters dated March and May of 2022. EPA expects the MPCA reports by the first week of January 2023. However, if the reports are not available for review by January 6, 2023, EPA requests that the South Andover Administrative Group (SAAG) schedule and conduct a meeting with EPA by January 13, 2023, to discuss the path forward in addressing the following issues for the Site:

- 1) Investigation to determine the groundwater flow direction in both the upper sand aquifer and the lower sand aquifer including installation of groundwater monitoring wells.
- 2) Groundwater investigation of 1,4-dioxane and PFAS.

In the meantime, the SAAG should begin preparing a Work Plan to conduct the above investigation activities and a Uniform Federal Policy (UFP)-Quality Assurance Project Plan (QAPP). The UFP-QAPP should also including routine groundwater sampling (with a frequency

greater than once every five years). Information on the UFP-QAPP and the template for the optimized UFP-QAPP worksheets can be found here: <https://www.epa.gov/fedfac/assuring-quality-federal-cleanups>. A draft of the Work Plan and UFP-QAPP should be submitted to EPA by February 24, 2023, which will provide SAAG over 30 days to complete the draft after meeting with EPA by January 13, 2023.

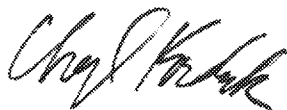
As you are aware, some information on the Red Oaks investigation and Waste Disposal Engineering (WDE) Landfill is available and can be found at the Minnesota Groundwater Contamination Atlas for the WDE landfill site:

<https://webapp.pca.state.mn.us/cleanup/search/superfund?siteId=1458-AREA00000000004>.

Additionally, attached are tabulated results with a map of locations for samples collected from temporary wells along Bunker Hill Boulevard, the northern boundary of the Site. Groundwater analysis from SB-2 shows 820 ug/L of 1,4-dioxane collected from 96-100 feet below ground surface, well above the drinking water criteria of 1 ug/L. Shallower samples from that same location also had detectable concentrations of 1,4-dioxane above 1 ug/L. These results provide a starting point from which the SAAG can begin investigations at the Site. The Consent Decree under Section VIII, paragraph 20, allows EPA to request additional investigations under Section 121(c) of CERCLA and applicable regulations. The investigation requested by EPA above is necessary to determine whether the Site contaminants may be contributing to unacceptable human health risk.

Please feel free to reach out with any questions. I can be reached by email at kondreck.cheryl@epa.gov, or via phone at 312-353-4872.

Sincerely,



Cheryl Kondreck, P.G.
Remedial Project Manager

cc: Viral Patel, EPA
Kevin Chow, EPA
Eric Pederson, MPCA

Attachments:

- 1) Groundwater Analytical Results, Bunker Lake Boulevard Groundwater Investigation
- 2) Figure of Temporary Well locations SB-1 through SB-5

Table 1
Groundwater Analytical Results
Bunker Lake Boulevard Groundwater Investigation
Andover, Minnesota
Projects B2110708.01 & B2110708.02

Compound/Parameter	CAS No.	Sample Location, Sample Name, Sample Depth, and Date Collected													Drinking Water Criteria (µg/L)	Source-Date
		SB-1				SB-2			SB-3			SB-4				
		SB-1S	SB-1S-FR	SB-1D	SB-1LSA	SB-2S	SB-2D	SB-2LSA	SB-3S	SB-3D	SB-3LSA	SB-4S	SB-4D	SB-4LSA		
		13-18'	13-18'	40-44'	80-84'	10-15'	41-45'	96-100'	11-16'	41-45'	93-97'	10-15'	41-45'	96-100'		
		6/6/2022	6/6/2022	6/6/2022	7/19/2022	6/7/2022	6/7/2022	7/21/2022	6/8/2022	6/7/2022	7/21/2022	6/8/2022	6/8/2022	7/22/2022		
Volatile Organic Compounds (VOCs) (µg/L)																
Acetone	67-64-1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	4,000	HRL-11
Benzene	71-43-2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.063	<0.50	<0.50	<0.50	<0.50	2	HRL-09
Bromodichloromethane	75-27-4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	6	HRL-93
Chloroform	67-66-3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	8.1	20	HRL-18
1,1-Dichloroethane	75-34-3	<1.0	<1.0	3.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	80	RAA-16
1,2-Dichloroethane	107-06-2	<0.20	<0.20	0.57	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	1	HRL-13
Methyl ethyl ketone (MEK, 2-Butanone)	78-93-3	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	25	4,000	HRL-94
Tetrahydrofuran	109-99-9	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	600	HRL-18
Toluene	108-88-3	<1.0	<1.0	<1.0	5.6	<1.0	<1.0	6.1	<1.0	<1.0	2.8	<1.0	<1.0	<1.0	200	HRL-11
Trichloroethene (TCE)	79-01-6	<0.10	<0.10	0.12	<0.10 [M1]	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.4	HRL-15
Vinyl chloride	75-01-4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	<0.050	<0.050	<0.050	<0.050	0.2	HRL-09
All other reported VOCs	----	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	---	---
Perfluorinated Compounds (PFCs) (µg/L)																
Perfluorobutanesulfonate (PFBS)	29420-43-3/ 375-75-5	0.004 J	0.004 J	0.006 J	0.004 J	0.003 J	0.059	0.004 J	<0.015	<0.015	0.002 J	<0.015	<0.015	<0.015	0.1	HBV-22
Perfluorobutanoic acid (PFBA)	375-22-4	0.031	0.032	0.028	0.041	<0.015	0.047	0.039	<0.015	<0.015	0.035	0.004 J	<0.015	0.009 J	7	HRL-18
Perfluorohexanesulfonate (PFHxS)	355-46-4	0.020	0.020	0.033	0.016	0.029	0.095	0.007 J	0.002 J	0.006 J	<0.015	<0.015	<0.015	<0.015	0.047	HBV-20
Perfluorohexanoic acid (PFHxA)	307-24-4	0.008 J	0.007 J	0.006 J	0.006 J	<0.015	0.080	0.009 J	0.005 J	0.004 J	<0.015	0.007 J	0.004 J	<0.015	0.2	HBV-21
Perfluorooctanesulfonate (PFOS)	1763-23-1	0.035	0.036	0.010 J	<0.015	0.093	0.005 J	<0.015	0.068	0.040	<0.015	0.023	0.004 J	<0.015	0.015	HBV-20
Perfluorooctanoic acid (PFOA)	335-67-1	0.035	0.033	0.020	0.011 J	0.012 J	0.035	0.006 J	<0.015	<0.015	<0.015	0.005 J	<0.015	<0.015	0.035	HRL-22
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.006 J	0.006 J	0.003 J	0.006 J	<0.015	0.044	0.005 J	<0.015	<0.015	<0.015	0.003 J	<0.015	<0.015	NE	---
Other Parameters (µg/L)																
1,4-Dioxane	123-91-1	<0.049	<0.049	0.48	0.59	2.5	1.6	840 [D2]	<0.049	0.071	3.1	<0.049	<0.049	0.058	1	HRL-13

Notes

The hierarchy of Drinking Water Criteria (DWC) presented is: Minnesota Department of Health (MDH) Health Risk Limit (HRL), United States Environmental Protection Agency (EPA) Maximum Contaminant Level (MCL), MDH Health-Based Value (HBV), or MDH Risk Assessment Advice (RAA), as available. The most conservative values for chronic or cancer exposures are presented. The dates of promulgation are provided, if available.

µg/L = Micrograms per liter.

< = Not detected at or above the laboratory reporting limit indicated.

--- = Not analyzed or calculated for this parameter or not applicable.

RL = Reporting limits for other parameters that are not listed individually in this table because their concentrations were below reporting limits provided in the laboratory report.

NE = Regulatory limit not established for this parameter.

J = Analyte was present between the method detection limit and reporting limit and should be considered an estimated value.

[D2] = Sample required dilution due to high concentration of target analyte(s). Reporting limit has been raised.

[F7] = Submission does not meet Laboratory Sample Acceptance Policy. See comments or additional qualifiers.

[M1] = Matrix spike and/or matrix spike duplicate recovery was high; the associated laboratory control sample and/or laboratory control sample duplicate recovery was acceptable.

[Q6] = Sample was received outside of recommended temperature range.

[T5] = The reported result cannot be used for compliance purposes.

* = The trip blank did not meet method temperature requirements.

Exceeds Drinking Water Criteria

Table 1
Groundwater Analytical Results
Bunker Lake Boulevard Groundwater Investigation
Andover, Minnesota
Projects B2110708.01 & B2110708.02

Compound/Parameter	CAS No.	Sample Location, Sample Name, Sample Depth, and Date Collected												Drinking Water Criteria (µg/L)	Source-Date
		SB-5				QAQC									
		SB-5S	SB-5D	SB-5LSA	SB-5LSA-FR	BLB-EB-1	BLB-EB-2	BLB-FB-1	BLB-FB-2	BLB-TB-1	BLB-TB-2*	BLB-TB-3	BLB-TB-4		
		10-15'	41-45'	80-84'	80-84'	---	---	---	---	---	---	---	---		
		6/9/2022	6/9/2022	7/20/2022	7/20/2022	6/9/2022	7/20/2022	6/9/2022	7/20/2022	6/6/2022	6/8/2022	7/21/2022	7/22/2022		
Volatile Organic Compounds (VOCs) (µg/L)															
Acetone	67-64-1	<20	<20	<20	<20	<20	<20	<20	21	<20	<20 ^[F7,Q6,T5]	<20	<20	4,000	HRL-11
Benzene	71-43-2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50 ^[F7,Q6,T5]	<0.50	<0.50	2	HRL-09
Bromodichloromethane	75-27-4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 ^[F7,Q6,T5]	<1.0	<1.0	6	HRL-93
Chloroform	67-66-3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 ^[F7,Q6,T5]	<1.0	<1.0	20	HRL-18
1,1-Dichloroethane	75-34-3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 ^[F7,Q6,T5]	<1.0	<1.0	80	RAA-16
1,2-Dichloroethane	107-06-2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20 ^[F7,Q6,T5]	<0.20	<0.20	1	HRL-13
Methyl ethyl ketone (MEK, 2-Butanone)	78-93-3	<10	<10	<10	<10	<10	72	<10	76	<10	<10 ^[F7,Q6,T5]	<10	<10	4,000	HRL-94
Tetrahydrofuran	109-99-9	<10	<10	<10	<10	<10	340	<10	340	<10	<10 ^[F7,Q6,T5]	<10	<10	600	HRL-18
Toluene	108-88-3	<1.0	<1.0	2.8	2.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 ^[F7,Q6,T5]	<1.0	<1.0	200	HRL-11
Trichloroethene (TCE)	79-01-6	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<1.0 ^[F7,Q6,T5]	<0.10	<0.10	0.4	HRL-15
Vinyl chloride	75-01-4	<0.050	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050 ^[F7,Q6,T5]	<0.050	<0.050	0.2	HRL-09
All other reported VOCs	---	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	---	---
Perfluorinated Compounds (PFCs) (µg/L)															
Perfluorobutanesulfonate (PFBS)	29420-43-3/ 375-75-5	0.003 J	0.019	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015 ^[F7,Q6,T5]	<0.015	<0.015	0.1	HBV-22
Perfluorobutanoic acid (PFBA)	375-22-4	0.009 J	0.023	0.10	0.10	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015 ^[F7,Q6,T5]	<0.015	<0.015	7	HRL-18
Perfluorohexanesulfonate (PFHxS)	355-46-4	0.026	0.11	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015 ^[F7,Q6,T5]	<0.015	<0.015	0.047	HBV-20
Perfluorohexanoic acid (PFHxA)	307-24-4	0.004 J	0.025	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015 ^[F7,Q6,T5]	<0.015	<0.015	0.2	HBV-21
Perfluorooctanesulfonate (PFOS)	1763-23-1	0.007 J	0.002 J	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015 ^[F7,Q6,T5]	<0.015	<0.015	0.015	HBV-20
Perfluorooctanoic acid (PFOA)	335-67-1	0.013	0.035	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015 ^[F7,Q6,T5]	<0.015	<0.015	0.035	HRL-22
Perfluoropentanoic acid (PFPeA)	2706-90-3	<0.015	0.010 J	0.007 J	0.006 J	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015 ^[F7,Q6,T5]	<0.015	<0.015	NE	---
Other Parameters (µg/L)															
1,4-Dioxane	123-91-1	<0.049	0.33	0.13	0.097	<0.049	<0.051	<0.049	<0.051	---	---	---	---	1	HRL-13

Notes

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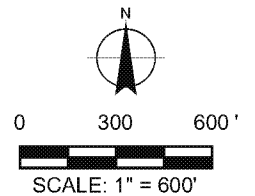
[T5] = The reported result cannot be used for compliance purposes.

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Exceeds Drinking Water Criteria



Soil Boring/Temporary Monitoring Well



**BRAUN
INTERTEC**
The Science You Build On.

11001 Hampshire Avenue S
Minneapolis, MN 55438
952.995.2000
braunintertec.com

Project No:
B2110708.01

Drawing No:
Fig1_WellLoc

Drawn By: KJS
Date Drawn: 6/22/2022
Checked By: BU
Last Modified: 6/22/2022

Temporary Monitoring Well Locations

Bunker Lake Boulevard NW

Andover, MN 55304

Well Location Map

Figure 1